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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,668	07/21/2003	Yasuhiro Yoshioka	FSF-031391	3824
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TAIYO CORPORATION 401 HOLLAND LANE #407 ALEXANDRIA, VA 22314			EXAMINER  CHEA, THORL	
			ART UNIT	PAPER NUMBER
			1795	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/622,668

**Applicant(s)**

YOSHIOKA ET AL.

**Examiner**

Thorl Chea

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 October 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,5,7,9,11 and 13-19 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,5,7,9,11 and 13-19 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is responsive to the response on October 02, 2008; Claims 1, 5, 7, 9, 11, 13-19 are pending in this instant application; claims 2-4, 6, 8, 10 and 12 have been canceled.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 2, 2008 has been entered.

#### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 5, 7, 9, 11, 13-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification disclosure does not provide an adequate written description as how the reducing agent form a dye. It does not describe the type of dyes formed by the reducing agent of formula R2. The specification on page 7 discloses that "the compound represented by formula (R2) produces a dye product which is yellow-colored. We have found that by using a combination with the reducing agent of general formula (R1) and the reducing agent of the general formula (R2), it is possible to control image color tone". However, the

specification fails to provide a guidance to one of the worker of ordinary skill in the art as to what is "dye-product which is a yellow-colored" is. It is unclear as how the dye product is formed, i.e., by reaction of the compound of formula (R1) and (R2), or by the reaction between the reducing agent particles (R2) themselves, or by the using known yellow coupler.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 5, 7, 9, 11, 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 10096310 (EP'310).

The EP'310 discloses a photothermographic material substantially as claimed. The photothermographic material contains one or more bisphenols compound having formula encompass the scope of formula (R1) and (R2) of the present claimed invention. See the generic phenol compound on page 3, [0013], compound (I) and the description of -L- and R1 to R8 on page 5 such as L is -CHR<sup>9</sup>-, R9 is hydrogen or alkyl; R1, R8 represent secondary alkyl group or a tertiary alkyl group; R2, R4, R5, R7 represent hydrogen, halogen, or an alkyl group, more preferably hydrogen; R1, R3, R6, R8 represent an alkyl group, more preferably, a primary group having 1-20 carbon atoms, a secondary alkyl group having 3-20 carbon atoms, or tertiary group having 4-20 carbon atom, and the substituent thereof includes alkoxy group, aryloxy group, hydroxyl group, acyloxy group, amino group, heterocyclic group. The compound of formula (I) is exemplified on page 7, compound (I-6), wherein a tertiary alkyl as R1 and R8; an alkyl

having 4 carbon atoms as R3 and R6; and an alkyl group (-CH<sub>3</sub>) associated with L. This compound is within the scope of formula (R1) of the present invention. The compound of formula (I-4), (I-9) or (I-10) are within the scope of formula (R2) of the present claimed invention. On page 5, [0034] to [0037], it is disclosed that “preferably R1 and R8 independently represent a secondary alkyl group or a tertiary alkyl group. If a secondary alkyl group or tertiary alkyl group is selected, coating amount can be markedly reduced, and hence the production cost of the photothermographic material and labors may be markedly reduced. Further, if secondary alkyl group or tertiary alkyl group is selected, image storability is extremely degraded, unless a compound having a phosphoryl group is used in combination. However, by using them in combination according to the present invention, the image storability is markedly improved. In view of development activity, tertiary alkyl groups are preferred as R1 and R8. While R1 and R8 may be identical or different, they are preferably identical to each other. R3 and R6, unsubstituted alkyl groups are preferred. Specific example includes methyl group, ethyl group, propyl group, butyl group t-butyl group, t-amyl group, cyclohexyl group, 1-methylcyclohexyl group and so forth. More preferred are methyl group, ethyl group, isopropyl group and t-butyl group, and most preferred are methyl group and ethyl group. Preferably, R2, R4, R5 and R7 independently a hydrogen atom, a halogen atom or an alkyl group, more preferably hydrogen group. L represent a group -S- or a group -CHR9- where R9 represent a hydrogen or alkyl group. See the other additive such as compound having phosphoryl group on pages 20-34; the halogenated compound on pages 60, [0242], [0243]; the amount of reducing agent on pages 11, [0039], [0040]; the amount of silver salt on page 35, [0074]; the toning agent and the ultrahigh contrast developer on page 41; the hydrazine derivative on page 49, [0167], [0168]; and time

and temperature processing on page 53, [0210]. The amount reducing agent is from 0.1 to 2 g/m<sup>2</sup>. See page 11, [0040].

EP'310 discloses the use of one or more "o-polyphenol compound", and herein the "o-polyphenol compound" taught therein encompasses the scope of the compound of formula (R1) and (R2) claimed in the present claimed invention. The compound has different activity accordingly to the substituent associated therein. See for instance the compound having tertiary alkyl groups in R1 and R8 is used for development activity. Therefore, It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use one or more compound within the scope of formula (I) of EP'310 with an expectation of achieving a highly useful material with sufficient image density and image storage stability.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 10096310 (EP'310) as applied to claims 1, 3, 5, 7, 9, 11, 13-17 above, and further in view of Oya et al (US 2001/0051319A1).

Oya et al discloses the compound within the scope of formula (A-2) in claim 7 as development accelerator of a photothermographic material. See compound of formula (2) in the abstract. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the phenol compound taught in Oya et al as development accelerator for the material of EP'310, and thereby provide a material as claimed.

#### ***Response to Arguments***

8. Applicant's arguments filed on October 2, 2008 have been fully considered but they are not persuasive because of the reason set forth in the above rejection and the argument provided in the Final Office Action on July 2, 2008. The response to the argument on July 2, 2008 is

incorporated in this office action. The applicants rely on new Declaration to obviate the prima facie case of obviousness. The applicants argue that it is ordinary known that image color tone is controlled by adjusting a silver color tone (color of developed silver). In contrast, the present inventor has found that the R2 compound assumes a yellow color upon oxidation reaction per se whereas the R1 compound forms no dye product, and that the image color tone can be controlled by using a combination of the R1 and the R2 compound, with the proviso that the R2 compounds contained in an amount of 5 % to 40 % by mole to a total amount of the R1 and R2 compound, thereby forming a desirable amount of yellow dye (page 7 and 18 of the present specification, and Declaration submitted on April 9, 2008).

The argument appears to be well-taken. There is an assertion in the specification disclosure that the compound represented by R2 produced a dye product which is a yellow-color. It is unclear from the specification as how a yellow-color dye is formed. The compound of formula R2 has been known as reducing for silver ion which is used in the formation of silver metal for black and white silver image. The compound of formula R2 is exemplified in EP'310 on page 7, compound I-9. When -R23 and -R24 is hydrogen, -R21 and -R22 is a tertiary alkyl having 4 carbon, the compound of formula R2 is the compound of formula (I-9) of EP'310. The compound of formula R1 of the claimed invention is exemplified as compound (I-12) disclosed in EP'310. If the compound having formula R2 can be formed a dye, this property would be inherent to the reducing agent taught in EP'310 since the reducing agent R2 is taught in EP'310. EP'310 also discloses the use of a combination of reducing agents such as shown in the above rejection. The different between the compound of formula (R1) and (R2) presented in the claimed invention is the substituent at the para-position. The formula (R1) contains R13 and R14

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as an alkyl group having 2 or more carbon atom, whereas the compound of formula (R2) contains a group  $-\text{CH}_2-\text{R}_{23}$  and  $-\text{CH}_2-\text{R}_{24}$ , wherein  $\text{R}_{23}$  and  $\text{R}_{24}$  represents hydrogen atom, a hydroxyl group, an alkoxy group, an aryloxy group, an acyloxy group, and amino group. The group at the para-position of the formula (R10 and (R2) are known as equivalent groups for the bisphenols reducing agent. See for instance the alkyl group, alkoxy group, the amino group and the aryloxy group associated with the compound exemplified in EP'310, pages 6-10. See also the definition of  $\text{R}_1$ ,  $\text{R}_3$ ,  $\text{R}_6$  and  $\text{R}_8$  of formula (I) of EP'310 on page 3, [0013] and [0029], [0030] wherein  $\text{R}_1$ ,  $\text{R}_3$ ,  $\text{R}_6$  and  $\text{R}_8$  represent an alkyl group, more preferably a primary alkyl group having 1-20 carbon atom, a secondary group having 3-20 carbon atoms, or a tertiary group having 4-20 carbon atoms. These groups further have one or more substituents. Examples of the substituents includes a halogen atom, an aryl group, a heterocyclic group, an alkoxy group, an alkylthio group, an arylthio group, a hydroxyl group, an acyloxy group, an amino group, an alkoxycarbonyl group, an acyl group, an acylamino group, an oxycarbonyl group, a carbamoyl group, a sulfonyl group, a sulfonamoyl group, a phosphoryl group, and a carboxyl group. Therefore, compound of formula  $\text{R}_1$  and  $\text{R}_2$  is within the scope of formula (I) of EP'310. The scope of the scope of the formula  $\text{R}_1$  may overlap the scope of formula  $\text{R}_2$  since the scope of  $\text{R}_{13}$  and  $\text{R}_{14}$  is an alkyl having 2 or more carbon atoms include the substituted and unsubstituted alkyl having 2 or more carbon atoms. The reactivity of the bisphenols depends on the substituent at the ortho-position and known in EP'310. EP'310 also discloses the use of a combination of reducing agents such as shown in the above rejection. Accordingly, the use of the combination of the reducing agent taught in EP'310 would have been obvious to the worker of ordinary skill in the art.



The Declaration under 37 CFR 1.132 submitted on April 9, 2008 and on October 2, 2008 fails to obviate the prima facie case of obviousness rejection. The Examiner maintains the position that the Declaration is not commensurate with the scope of the claimed invention. It appears that the criticality of the present claimed invention is based on the substituents R13 and R14 of the compound of formula R1 and the substituents  $-CH_2-R23$  and  $-CH_2-R24$  of formula R2. The Declaration has been submitted fails to provide results commensurate with the scope of these substituents. In the supplemental Declaration submitted on October 2, 2008, the applicants asserted that "conventionally, the color tone has been able to be controlled only in the M-G direction by adjusting the size of the developed silver. In contrast, it is found in the present invention that the color tone can be unexpectedly controlled in the Y-B direction by combination of at least one reducing agent represented by formula R1 and at least one reducing agent represented by formula R2. However, the Declaration fails to show the results associated with the controlling in M-G direction vs Y-B direction. "Opinion affidavits must be evaluated for reasonableness and validity of the opinion. No weight is given to an opinion affidavit on the legal conclusion in issue. See In re Lindall, 155 USPQ 521; In re Chilowsky, 134 USPQ 515.". This Declaration is not factual and cannot be used to determine the unexpected results with material within the scope of the claimed invention.

#### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TC/  
November 7, 2008

/Thorl Chea/  
Primary Examiner, Art Unit 1795